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14 March 2018
Australian Securities Exchange (ASX) Announcement

# Mining Industry is Adopting Sensera's Location Awareness Solutions as a Critical Capability for the Digital Mine

## **Highlights:**

- The \$3B mining industry is a key focus market and is adopting nanotron's location awareness solutions
- Nanotron's location awareness solutions for collision avoidance and underground tracking have already been deployed (sales) in over 50 of the world's 62,000 commercial mines
- Longer-term new capabilities such as gas sensors and location data analytics will increase nanotron's share of the overall value chain of the mine's ecosystem

Sensera Limited (ASX: SE1, "Sensera" or "the Company"), a designer and manufacturer of end-to-end sensor solutions and services for the Internet of Things (IoT) market, provides the following update to shareholders.

### **Target Markets**

Sensera recently announced an exclusive supply agreement between its wholly owned subsidiary nanotron Technologies GmbH (nanotron) and SMARTBOW GmbH, a leading provider of farm animal health solutions. This agreement represents the initial go to market strategy for nanotron's location awareness products in the animal health sector.

The Company's second most advanced target market is in the mining sector. With the emergence of the Digital Mine, location awareness is a critical capability. The following background information provides an overview of the status of the Company's mining business and future intentions.

#### What is nanotron's product offering for the mining industry?

Location awareness delivers improved Safety, Increased Productivity and Compliance.

Based on its wireless location-awareness technology, nanotron offers Collision Avoidance (CAS), Safety Zone and Tracking solutions for people, vehicles, assets and material. Any combination works simultaneously leveraging the same solution elements including tags for mineworkers and transponders for mobile equipment such as vehicles and heavy machinery. Decentralised software intelligence allows for autonomous operation of CAS and mine monitoring solutions being operated at the same time.

#### What is nanotron's market position in CAS?

Nanotron started to equip the first commercial CAS installations in South Africa in 2012. To date, more than 100,000 cap lamps with the CAS functionality protect miners in the majority of Platinum Mines in the country. Each miner requires one smart RF module from nanotron as part of the miner's cap lamp or personal tag. Vehicles and machines are equipped with up to five smart RF modules each. The CAS application software works autonomously on each mobile device. It constantly monitors the distance to any potentially dangerous contender, sounds an alarm if too close and may even stop a vehicle automatically.

Several next-generation CAS products based on nanotron's smart RF modules are in pilot stage and will be deployed upon completion. Historically, pilots have taken between nine and twelve months to complete. However, as an increasing number of commercial solutions are deployed globally the purpose of pilots has shifted from technical feasibility toward true demonstration of improved safety and operating savings, thereby quantifying return on investment. This will reduce the selling cycle and time required for pilots prior to commercial deployment.

### What is nanotron's market position in underground tracking?

Tracking people, assets and material in real-time provides mining operators with the necessary visibility of safety-relevant situations and business processes. As an example, Becker Mining Systems is helping Group Peñoles, in Mexico to improve compliance with safety regulations in their silver mines and increase productivity by monitoring haul trucks in real-time with location-awareness from nanotron.

Nanotron's wireless tracking solution is particularly cost effective for underground use. With very high positioning accuracy, it offers the lowest-cost location infrastructure available today. The Company's ability to deploy anchors - the receivers that detect the location of tags and transceivers - up to several hundred metres apart brings clients material benefits, as opposed to earlier tracking solutions based on WiFi and other competing technologies which require a greater number of receivers over the same area.

High accuracy real-time underground tracking based on nanotron's location-awareness technology started in 2013 with commercial installations in China – one of the largest mining markets. Since then several additional mining markets have adopted this solution.

#### Where does nanotron have commercial installations and pilots?

The Company has achieved commercial installation and pilots in Australia, Chile, Canada, Europe, India, Mexico, Kazakhstan, Russia, South Africa and the USA.

## What is nanotron's biggest installation in the mining industry to date?

A nanotron system integration partner, ATUT, has completed the biggest installation to date at the Park Thermic coal mine in Nallihan-Ankara, Turkey.

A total of more than 2,300 miners and assets are tracked 24/7 throughout tens of kilometres of mining tunnels. ATUT has equipped each miner with a personal tag that utilises one of nanotron's smart RF modules. Throughout the mine, ATUT has installed several hundred anchor devices reporting to a server at the surface that runs nanotron's well-established third generation location engine and server software

nanoLES 3. The product provides positions of people and assets together with additional insights to the central control room of the mine

#### What is the amount of nanotron revenue generated per installed mine?

An underground mine with an average of 1,500 mining workers, 50 vehicles and 20 kilometers of mining tunnels buys the equivalent of up to US\$75,000 worth of nanotron smart RF modules and anchor devices.

A surface mine with 100 mining workers and another 100 vehicles typically requires up to US\$20,000 worth of nanotron components.

Based on the current business model which is predominantly supply of hardware solutions, the Company earns recurring revenue from mine expansion, replacing tags and other hardware for maintenance.

## What is the market potential in mining for nanotron?

The total available market exceeds US\$3 billion. With over 10 million miners and 62,000 mines globally, the Company still has significant market penetration ahead. In the current geographies and installed mine types, the existing nanotron product offering addresses at least US\$500 million worth of available market.

## How is nanotron planning to increase penetration for underground tracking?

Most of the tracking solutions in production today rely on high-speed fibre data networks installed throughout the mine. In order to increase penetration, nanotron has developed anchors that work over existing lower speed data networks such as leaky feeder or wirelessly. These advancements reduce overall infrastructure cost and complexity.

Longer-term new capabilities such as gas sensors through nanotron's parent company Sensera will add to nanotron's location awareness capability to address mining needs. Currently, the company is employing sensors from other vendors in solutions that significantly impact operating efficiency. For example, sensors and location awareness combine to control a mine's ventilation systems allowing ventilation on demand (VoD) which has been proven to save up to 40% of an installation's electricity bill.

Nanotron is also developing location data analytics through more complex software that will increase nanotron's share of the overall value chain of the mine's ecosystem and increase the value of recurring revenues.

## What is the status of nanotron's expansion plan?

To execute its expansion strategy, the Company is in the process of hiring additional sales and application engineering resources. Scaling the organisation is critical to expanding the business as well as maintaining close cooperation with industry experts.

With more than ten pilot installations underway in Canada, China, Chile, India and Russia, nanotron expects that this expansion strategy will drive further growth in 2019 and beyond.

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#### **About Sensera Limited (ASX: SE1):**

Sensera is a rapidly growing sensor-based location and situation awareness organization that provides end-to-end solutions and services in the rapidly growing world of the Internet of Things (IoT). Sensera Inc. manufactures a family of proprietary microdevices and sensor systems that serve the Medtech, Industrial, Defense and Aerospace markets. The Company's nanotron division provides hardware and software that enables sophisticated location tracking for farm animals, mine safety and productivity, where its wireless tracking solution enables clients worldwide.

Shares in Sensera Limited (ASX: SE1) are traded on the Australian Securities Exchange (ASX). For more information, please visit our website: www.sensera.com. Any forward-looking statements in this announcement are not guarantees of future performance and involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of the Company, its directors and management.

#### **About nanotron:**

Nanotron is a leading provider of electronic location-awareness components based in Berlin, Germany. Nanotron specialises in the design, development and sale of components, modules and software that enable precise real-time positioning and concurrent wireless communication.

Nanotron brings established core markets servicing large blue-chip end-users in the mining and agricultural sectors, a proven product portfolio with volume production and deployment established, and a global distribution network that can fulfil current and new market verticals. For more information, visit <a href="https://www.nanotron.com">www.nanotron.com</a>.